

REMARKS

Applicant has amended the claims 1 through 4 and 17 and canceled claim 14 without prejudice. Applicant respectfully submits that these claims are supported by the application as originally filed and does not contain any new matter ( see Fig. 2 and page 10, line 1-10). Therefore, the Office Action will be discussed in view of the claims as amended.

The Examiner has rejected the Claims 1, 5, 9, 10-14, 17 under 35 U.S.C 102(b) as being anticipated by or, in the alternative, under 35 U.S.C 103(a) as being obvious over Hebard (U.S. 4966885) stating that Hebard teaches a process wherein a superconducting material YBCO is treated at the claimed energy and incidence angle wherein the ions are chosen from the claimed elements (col. 2); as the process of irradiating the superconductor at the claimed process conditions, it appears that the modification would be bulk, external, or internal; the surface of the material is monocrystalline, amorphous, or polycrystalline; the surface is polished or unpolished; and it is further the Examiner's opinion that these claimed properties appear to be inherently taught by the prior art as the prior art process is substantially similar to the claimed process.

In reply to this rejection, Applicant respectfully submits that Hebard (US 4966885) discloses a method for producing an article comprising a thin film of a planar metal oxide superconductor, and the thinning the film comprises exposing the film to an ion beam. In contrast thereto, Applicants invention uses one beam from a plasma sputtering device. Still further, Applicant respectfully submits that Hebard does not disclose or suggest that the particle beam is generated by a plasma sputtering device; and the method of amended claim 1 is different from the cited Hebard and has advantages thereover. Particularly, compared with an ion beam, the plasma sputtering can be performed on a larger area of the material surface, and is much more effective to clean and smooth the material surface, and to remove impurity from the material surface. Compared with an ion beam gun for providing the ion beam, the plasma sputtering apparatus is simpler, can be installed more easily, is at much lower cost and is suitable for mass industrial production.

In view of the above, Applicant respectfully submits that Hebard does not show each and every element of Applicant's invention and does not show, suggest or teach Applicant's invention as claimed. Therefore, Applicant respectfully submits that the Claims 1, 5, 9, 10-

13, 17 under 35 U.S.C 102(b) as anticipated by or, in the alternative, under 35 U.S.C 103(a) as obvious Hebard.

The Examiner has rejected the claims 1, 4, 6, 8, 10-14, and 16 under 35 U.S.C. 102(b, e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as being obvious over Reade et al. (US 6809066) stating that Reade et al. teaches a method for ion texturing superconducting devices (col. 1) wherein materials to be textured include MgO, YSZ, ceria, nickel alloys, etc. (col. 3) wherein the claimed elements are used in the ion beam, claimed energies (col. 13) and the claimed angles (col. 11) are disclosed; as the process of irradiating the superconductor at the claimed process conditions, it appears that the modification would be bulk, external, or internal; the surface of the material is monocrystalline, amorphous, or polycrystalline; the surface is polished or unpolished; these claimed properties appear to be inherently taught by the prior art as the prior art process is substantially similar to the claimed process; and as to the limitation of wherein alloying constituents of the metal alloys are at least 0.1 wt%, one of ordinary skill in the art at the time applicant's invention was made would recognize that this limitation would be met by a multitude of metal alloys that would be used in accordance with the invention.

In reply to this rejection, Applicant respectfully submits that Reade et al. (US 6809066) discloses a method of ion texturing a noncrystalline surface, and the exposing the noncrystalline surface to at least two ion beams to texture the noncrystalline surface. In contrast thereto, Applicants invention uses one beam from a plasma sputtering device. Still further, Applicant respectfully submits that Reade does not disclose or suggest that the particle beam is generated by a plasma sputtering device; and the method of amended claim 1 is different from Reade and has advantages there over. Particularly, compared with an ion beam, the plasma sputtering can be performed on a larger area of the material surface, and is much more effective to clean and smooth the material surface, and to remove impurity from the material surface. Compared with an ion beam gun for providing the ion beam, the plasma sputtering apparatus is simpler, can be installed more easily, is at much lower cost and is suitable for mass industrial production.

In view of the above, Applicant respectfully submits that Reade does not show each and every element of Applicant's invention and does not show, suggest or teach Applicant's invention as claimed. Therefore, Applicant respectfully submits that the Claims 1, 5, 9, 10-

13, 17 under 35 U.S.C 102(b) as anticipated by or, in the alternative, under 35 U.S.C 103(a) as obvious over Reade.

The Examiner has rejected the claims 15 and 18 under 35 USC 103(e) as being obvious over Hebard in view of Chu stating that Hebard teaches all of the elements of the invention as claimed, except wherein the superconductor is annealed at the claimed temperature after texturing; Chu teaches a method of making superconductors wherein the YBCO is annealed after ion texturing; and it would be obvious to modify Hebard in view of the teachings of Chu.

In reply to this rejection, Applicant would like to incorporate by reference his comments above concerning Applicant's invention and Hebard. Applicant has also reviewed Chu and respectfully submits that it too use ion beams.

In view of the above, Applicant respectfully submits that the claims 15 and 18 are not obvious over Hebard in view of Chu.

The Examiner has rejected the claim 7 under 35 USC 103 as being obvious over Reade in view of Doi and Shindo stating the Reade shows all of the invention except for a method of texturing semiconductors; Shindo discloses a method of making a solar cell which requires texturizing; Doi teaches using GaAs as a substrate for semiconductors; and it is obvious to one of ordinary skill in the art to modify Reade in view of the teachings of Doi and Shindo.

In reply to this rejection, Applicant would like to incorporate by reference his comments above concerning Reade and Applicant's invention. Applicant has reviewed Shindo and respectfully submits that it relates to the production of solar cells which are not a semiconductor in the sense of Applicant's or Reade's invention. Still further Shindo uses a plurality of beams and not one beam as in Applicant's invention. Still further Applicant has reviewed Doi and respectfully submits that Doi and respectfully submits that at Col. 7 thereof it teaches GaAs on silver as a substrate for superconductors which are used in liquid Nitrogen, which are not high temperature superconductors. Therefore Applicant respectfully submits that one of ordinary skill would not look to Doi.

In view of the above, Applicant respectfully submits that not only is the combination suggested by the Examiner not Applicant's invention, but also the combination suggested by the examiner would not be suggested to one of ordinary skill in the art. Therefore, Applicant

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respectfully submits that claim 7 is not obvious over Reade in view of Doi and Shindo.

Applicant respectfully and retroactively requests a three (3) month extension of time to respond to the Office Action and respectfully requests that the extension fee in the amount of \$555.00 be charged to QUINN EMANUEL DEPOSIT ACCOUNT NO. 50-4367.

In view of the above, it is respectfully requested that this Amendment be entered, favorably considered and the case passed to issue.

Please charge any additional costs incurred by or in order to implement this Amendment or required by any requests for extensions of time to QUINN EMANUEL DEPOSIT ACCOUNT NO. 50-4367.

Respectfully submitted,

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William L. Androlia

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